

REMARKS

Reconsideration and allowance of the above-mentioned application in view of the above amendments and remarks that follow is requested.

Claims 6, 7, 15, 22, 23, 25 – 29 and 32 – 35 have been withdrawn from further consideration by the Examiner.

Claims 1, 5, 10, 14, 17, 36 and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Lang. The Examiner appears to aver that Lang discloses a system for creating a line of light beams using a radiant energy source (10 – 14) and an altering device (15) where the energy emerges from the altering device to form a line in a predetermined plane. And with respect to claims 5, 14, 21 and 40, the Examiner avers that Lang discloses the altering device is a fiber optic rod as in FIG. 5. The rejection of these claims is believed untenable and withdrawal thereof is respectfully requested in view of the above amendments to independent claims 1, 10, 17 and 36. For example, claim 1, as amended, now calls for a **hollow tube** altering device and a radiant energy source positioned to apply radiant energy **orthogonally** into the hollow tube. This distinction of Applicant's over the prior art requires no special cutouts and allows laser light to be aimed directly into the outer surface of the hollow tube and orthogonal to its longitudinal axis. The light striking the hollow tube has a portion reflected off its outer surface with the remaining light transmitted into the hollow tube where by means of multiple reflections off cylindrical surfaces, the light automatically emerges from the outside of the hollow tube in the form of a 360 degree ring of light. Only a trace of non-useful light exits out of the ends of the hollow tube. Applicant submits that this distinction and advantage is not anticipated or contemplated by Lang since Lang employs rods, such as, fiber optic rods that receive radiant energy through the ends of the fiber optic rods and appears in all embodiments to **NOT want the light to get out of the sides of the rods for light efficiency purpose**. In addition, fiber optic rods are made from a series of individual fibers that include a cladding to prevent light from exiting from the sides of the fibers. This teaching is directly

the opposite of what Applicants are claiming. That is, Applicant's hollow tube does not include a cladding precisely because it is desired that light penetrates into and escape through the wall of the hollow tube. Thus, Applicant submits that it would not be obvious to substitute a hollow tube for the fiber optic rod in Lang because the Lang's teaching is just the opposite to and teaches away from what Applicant is claiming.

With respect to claims 10, 17 and 36, Applicant submits that all of the arguments presented above toward the patentability of claim 1 apply here also. In addition, these claims require the altering device to come from a Markush Group consisting of a hollow tube, a hollow tube within a hollow tube and capillary array. The distinction of all of these altering devices over Lang is that not only is the radiant energy applied orthogonally to the altering devices, NO cladding is desired. Claims 5, 14 and 40 have been cancelled.

Claims 1, 8, 10, 16, 17 and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Neuberger et al. The rejection of these claims is believed untenable and withdrawal thereof is respectfully requested in view of the above amendments to independent claims 1, 10, 17 and 36. Claim 1, as amended, now calls for a **hollow tub** altering device and a radiant energy source positioned to apply radiant energy **orthogonally** into the hollow tube. Applicant submits that this distinction is not anticipated or contemplated by Neuberger et al. since Neuberger et al. employs a lens array that receives radiant energy from emitters along the z axis and not orthogonal as Applicant claims. This teaching is directly the opposite of what Applicants are claiming. That is, Applicant hollow tube allows light to penetrate into and escape through the wall of the hollow tube. Thus, Applicant submits that Neuberger et al. is teaching just the opposite to and away from what Applicant is claiming. With respect to claims 10, 17 and 36, Applicant submits that all of the arguments presented above toward the patentability of claim 1 apply here also. In addition, these claims require the altering device to come from a Markush group consisting of a hollow tube, a hollow tube within a hollow tube and capillary array. The distinction of all of these altering devices over Neuberger et al. is that not only is the radiant energy applied orthogonally to the altering devices, light passing into and through the altering device is desirable. The light altering devices in the Markush

Group do not transmit light down the length of the claimed tubes. The devices' function is to have a laser beam enter a light altering device, where a single beam is changed by multiple reflections and transmissions to form a different and unique light pattern. Each reflection and/or transmission from a tube's surface changes the direction of a portion of the beam's light. However, since the tubes are circular (round) these many reflections occur in a single plane. The resulting shape is no longer a single beam, but emerges as many beams radiating in many directions. Thus, this emerging light occurs in a single plane generally orthogonal to the tubes. Claims 8, 16 and 17 have been cancelled.

Claims 2 – 3, 9, 11- 13, 18 – 20, 24, 30 and 37 – 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neuberger. Claims 2 – 4, 11 – 13, 18 – 20 and 37 – 39 have been canceled. Applicant submits that remaining rejected dependent claims 9, 24 and 30 are allowable for the reasons presented hereinbefore supporting the allowability of independent claims 1, 10 and 17 because they do not supply the heretofore mentioned deficiencies pointed out in Neuberger et al. Also, Applicant takes exception to the averment that it is a well known optical method to use hollow shaped elements (usually with reflective walls) to produce reflection/propagation of light in a light-altering device, and thus it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the tubular figure of Neuberger et al. to include a hollow tube. Applicant respectfully ask the Examiner to cite prior art that shows the use of a clear hollow tube, a clear hollow tube within a clear hollow tube or a capillary array that radiant energy is applied orthogonally into in order to produce a line as claimed. Applicant submits there is none because the teachings of the prior art is toward applying radiant energy longitudinally into a tube or fiber optic device in order to produce a line with the sides of the tubes or fiber optic devices being cladded or covered with reflective material in order to prevent escape of light through the sides of the devices. This teaching is in opposite to what Applicant is claiming.

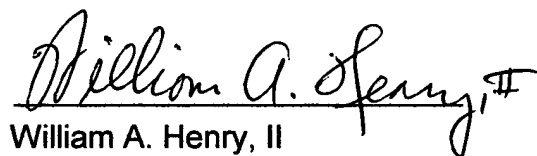
The Examiner's attention is directed to newly cited USPN 5,898,809 to Taboada et al. that discloses the use of a laser light directed orthogonally into a fiber optic bundle in order to project a sheet of light. While this patent does show projecting a laser light orthogonally into a light altering device in order to project a sheet of light, Applicant submits that the patent does not anticipate or make the claims as now written obvious. To wit: the claims now call for the light altering device to be either a clear tube or from a Markush group consisting of a tube, a tube within a tube or a capillary array. None of these claimed distinctions of Applicant's are disclosed or contemplated by Taboada et al. since its teachings are directed to a fiber optic light altering member. That is, Taboada et. actually teaches away from what Applicant claims since These claimed distinctions of Applicant's over Taboada et al. gives Applicant and advantage over Taboada et al. since varying the index of refraction of light reflecting internally in a fiber optic device is significantly different teaching than employing air to glass internal reflections. In addition, fiber optic strands or bundles of strands are significantly more expensive to fabricate than glass tubes due to materials cost, and expensive tolerance requirements. In summary, Applicant submits that there is no nexus from the teachings of Taboada et al. that would lead one to replace the fiber optic bundle of Taboada et al. with one of the Markush group of light altering devices as claimed by Applicant, thus making Taboada et al. deficient toward contemplating what Applicant claims.

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The citation of references to Anderson, Ohe et al., Grinberg et. al., and Rushworth are acknowledged, however, Applicant submits that they in no way anticipate or make the claims as now presented obvious.

A telephone interview is respectfully requested at the number listed below. The undersigned will be happy to discuss any Examiner-proposed amendments as may be appropriate.

Respectfully submitted,

A handwritten signature in cursive script that reads "William A. Henry, II". The signature is written in dark ink and is positioned above the printed name and title.

William A. Henry, II
Attorney for Applicant
Registration No. 26,403
Telephone (585) 385-3798

WAH

Attachment: Citation of Reference

VERSION WITH MARKINGS TO SHOW CHANGES MADE

1. (Amended) A system for creating a line, comprising:
a radiant energy source; and

[an] a hollow tube altering device, and wherein radiant energy projected from said [laser] radiant energy source orthogonally into said altering device emerges from said altering device to form a line in a predetermined plane.

10. (Amended) A line producing apparatus, comprising:

a laser source adapted to produce radiant energy; and

a laser output altering device, and wherein radiant energy projected from said laser source orthogonally into said laser output altering device emerges from said laser output altering device in a predetermined plane, and wherein said laser output altering device is one of a group consisting of: a hollow tube, a hollow tube within a hollow tube and a capillary array.

17. (Amended) A method for creating a line, comprising the steps of:

providing a laser source; and

providing a device for receiving radiant energy from said laser source, said device being adapted such that radiant energy projected from said laser source orthogonally into said device emerges from said device in an outward pattern to form a line in a predetermined plane, and wherein said device is one of a group consisting of: a hollow tube, a hollow tube within a hollow tube and a capillary array.

36. (Amended) An apparatus adapted to create an optical line, comprising:

a laser source;

a device for receiving radiant energy from said laser source, said device being adapted such that radiant energy projected from said laser source orthogonally into said device emerges from said device in an outward pattern to form an optical line in a predetermined plane, and wherein said device is one of a group consisting of: a hollow tube, a hollow tube within a hollow tube, and a capillary array.